

## 1. Running and managing Docker containers and images

```
#####  
#                               WARNING!!!!                               #  
# This is a sandbox environment. Using personal credentials             #  
# is HIGHLY! discouraged. Any consequences of doing so are              #  
# completely the user's responsibilities.                                #  
#                               #                                       #  
# The PWD team.                                                         #  
#####  
[node1] (local) root@192.168.0.8 ~  
$ docker images  
REPOSITORY      TAG          IMAGE ID      CREATED      SIZE  
[node1] (local) root@192.168.0.8 ~  
$ docker pull ubuntu:16.04  
16.04: Pulling from library/ubuntu  
61e03ba1d414: Pull complete  
4afb39f216bd: Pull complete  
e489abdc9f90: Pull complete  
999fff7bcc24: Pull complete  
Digest: sha256:6aab78d1825b4c15c159fecc62b8eef4fdf0c693a15aace3a605ad44e5e2df0c  
Status: Downloaded newer image for ubuntu:16.04  
docker.io/library/ubuntu:16.04  
[node1] (local) root@192.168.0.8 ~  
$ docker pull ubuntu:16.10  
16.10: Pulling from library/ubuntu  
dca7be20e546: Pull complete  
40bca54f5968: Pull complete  
61464f23390e: Pull complete  
d99f0bcd5dc8: Pull complete  
120db6f90955: Pull complete  
Digest: sha256:8dc9652808dc091400d7d5983949043a9f9c7132b15c14814275d25f94bca18a  
Status: Downloaded newer image for ubuntu:16.10  
docker.io/library/ubuntu:16.10  
[node1] (local) root@192.168.0.8 ~  
$ docker images  
REPOSITORY      TAG          IMAGE ID      CREATED      SIZE  
ubuntu          16.04        065cf14a189c  4 days ago   135MB  
ubuntu          16.10        7d3f705d307c  3 years ago  107MB  
[node1] (local) root@192.168.0.8 ~  
$  
[node1] (local) root@192.168.0.8 ~  
$ docker rmi 7d3f705d307c  
Untagged: ubuntu:16.10  
Untagged: ubuntu@sha256:8dc9652808dc091400d7d5983949043a9f9c7132b15c14814275d25f94bca18a  
Deleted: sha256:7d3f705d307c7c225398e04d4c4f8512f64eb8a65959a1fb4514dfde18a047e7  
Deleted: sha256:d9db289b9342d9617596cd6ee3bba988629e24d9afa5db4e4b0e4e491c65007d  
Deleted: sha256:a87725e8597b97f2399bc3aa50b0e2eec903b8ce19055668d3befb012918205c  
Deleted: sha256:38cf10a2801529348366953e9b933d3524360dedc91d3e4d5d7f941da0c973c9  
Deleted: sha256:61172966249d43026dbd017eec3a9575e37bddf8a269a9f09ecb559d7bfe7fef  
Deleted: sha256:57145c01eb80040fdd0a24cde20af4788605b49593188d4f7efab099af89a08e  
[node1] (local) root@192.168.0.8 ~  
$ docker images  
REPOSITORY      TAG          IMAGE ID      CREATED      SIZE  
ubuntu          16.04        065cf14a189c  4 days ago   135MB
```

```

[node1] (local) root@192.168.0.8 ~
$ docker run ubuntu:16.04 /bin/echo 'Hello world!'
Hello world!
[node1] (local) root@192.168.0.8 ~
$ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
[node1] (local) root@192.168.0.8 ~
$ docker ps -a
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
c88049c4a1f1   ubuntu:16.04   "/bin/echo 'Hello wo..."   45 seconds ago   Exited (0) 44 seconds ago   wizardly_heisenberg
[node1] (local) root@192.168.0.8 ~
$ docker run ubuntu:16.04 /bin/bash
[node1] (local) root@192.168.0.8 ~
$ docker ps -a
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
372b7a6f5632   ubuntu:16.04   "/bin/bash"   8 seconds ago   Exited (0) 6 seconds ago   wonderful_mclaren
c88049c4a1f1   ubuntu:16.04   "/bin/echo 'Hello wo..."   About a minute ago   Exited (0) About a minute ago   wizardly_heisenberg
[node1] (local) root@192.168.0.8 ~
$ docker run -it ubuntu:16.04 /bin/bash
root@9349eeef596a:/# pwd
/
root@9349eeef596a:/# ls
bin boot dev etc home lib lib64 media mnt opt proc root run sbin srv sys usr var
root@9349eeef596a:/# exit
exit
[node1] (local) root@192.168.0.8 ~
$ docker run -d ubuntu:16.04 /bin/sleep 3600
0a9f93722cc9297e4780cb00f09437ae7722f155be0b2c90edc9a0af1235a74f
[node1] (local) root@192.168.0.8 ~
$ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
0a9f93722cc9   ubuntu:16.04   "/bin/sleep 3600"   10 seconds ago   Up 9 seconds   stoic_robin
son

```

```

[node1] (local) root@192.168.0.8 ~
$ docker exec -it 0a9 /bin/bash
root@0a9f93722cc9:/# ps aux
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         1  0.0  0.0   4372   696 ?        Ss   00:09   0:00 /bin/sleep 3600
root        10  0.3  0.0  18232  3292 pts/0    Ss   00:16   0:00 /bin/bash
root        21  0.0  0.0  34420  2768 pts/0    R+   00:17   0:00 ps aux
root@0a9f93722cc9:/# exit
exit
[node1] (local) root@192.168.0.8 ~
$ docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS   NAMES
0a9f93722cc9   ubuntu:16.04   "/bin/sleep 3600"       7 minutes ago  Up 7 minutes          stoic_robins
on
[node1] (local) root@192.168.0.8 ~
$ docker stop 0a9
0a9
[node1] (local) root@192.168.0.8 ~
$ docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS   NAMES
RTS           NAMES
0a9f93722cc9   ubuntu:16.04   "/bin/sleep 3600"       8 minutes ago  Exited (137) 8 seconds ago
stoic_robinson
9349eeef596a   ubuntu:16.04   "/bin/bash"            9 minutes ago  Exited (0) 8 minutes ago
brave_banach
372b7a6f5632   ubuntu:16.04   "/bin/bash"            10 minutes ago Exited (0) 10 minutes ago
wonderful_mclaren
c88049c4a1f1   ubuntu:16.04   "/bin/echo 'Hello wo..." 11 minutes ago Exited (0) 11 minutes ago
wizardly_heisenberg
[node1] (local) root@192.168.0.8 ~
$ docker rm $(docker ps -a -q)
0a9f93722cc9
9349eeef596a
372b7a6f5632
c88049c4a1f1
[node1] (local) root@192.168.0.8 ~
$ docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS   NAMES
[node1] (local) root@192.168.0.8 ~
$ docker run --rm ubuntu:16.04 /bin/echo 'Hello and goodbye!'
Hello and goodbye!
[node1] (local) root@192.168.0.8 ~
$ docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS   NAMES

```